subtraction including alterations of brightness or color saturation, but the alterations should aim to compensate for viewing through colored gel and enable the observer to receive details of degrees of balanced contrasts from the whole color spectrum inside each anaglyphic color channel. The ACB Color Contrast Filter serves five functions.

1. To equalize anaglyphically viewed contrasts of brightness between corresponding areas of the stereo pairs.
2. To cause details and graduations of tones from the entire spectrum to be evenly and faithfully presented anaglyphically to each eye as in natural viewing.
3. To adjust color hues to compensate for being viewed through colored gel.
4. To assign degrees of color contrast adjustment appropriate to the efficiency, limitations or nature of the Color Wash treatment that is to follow later.
5. To effect control of the brightness of the resulting anaglyphic image.

The effectiveness of an ACB Stereo Contrast Filter may be demonstrated when the entire ACB filter process is applied to a stereo pair that consists of two identical color test charts which display the additive and subtractive primary colors, red, green, blue, cyan, magenta and yellow. The resulting single anaglyphic color chart reveals balanced contrasts from the whole color spectrum inside each anaglyphic color channel.

An example of such an Anaglyphic Contrast Balance achieved via an ACB Stereo Color Contrast Filter is as follows.

ACB STEREO COLOR CONTRAST FILTER VALUES.

For the image viewed through red gel.	For the image viewed through green-blue gel.
Red + cyan 51%	Red – magenta 36% – yellow 36%
Yellow + cyan 34%	Yellow nil treatment
Green – cyan 57%	Green + magenta 35%
Cyan – cyan 63%	Cyan + magenta 37%
Blue – cyan 46%	Blue + yellow 56%
Magenta + cyan 47%	Magenta + yellow 20%
Black – black 10%	Black – black 10%

The basic Anaglyphic Contrast Balance addresses the primary colors Red, Green and Blue.

Red + cyan	Red – magenta
Green – cyan	Green + magenta
Blue – cyan	Blue + yellow

The filter values given above are in absolute percentages so that a percentage of a color hue can be added to where there was no prior presence of it.

Note that the ACB filter value for black in both the left and right images is reduced. This assists in reducing the Contrast of the black color records in the stereo pair to enable uptake of the color wash described later herein. By comparison, should the ACB filter value for black not be reduced, a brighter anaglyph results. Should the ACB Filter value for black be increased, the resulting anaglyph is brighter yet.

Such control of brightness is achieved when variation to the ACB Stereo Color Contrast Filter's values for black are followed by the processes of Luminosity Compression and Color Wash. The effect is more subtle where color wash via RGB levels is used. These embodiments of the present invention are described later herein.

This demonstrates:

1. Near total extinction of the opposite eyes view.
2. That the image color washed predominantly red will be viewed through red gel.
3. That the image color washed predominantly green-blue will be viewed through green-blue gel.
4. That the color hue and contrasts of the stereo pair are contained inside saturated and spectrally opposite channels.
5. That each eye's opposing view will be perceived invisibly as black.
6. That the anaglyphically viewed black for each view will be the saturation of the opposing color wash.

The combination of red and green-blue color channel saturation is herein and throughout referred to as this combination achieves both excellent color perception and mutual extinction, however it is accepted that other color combinations may be used without departing from the scope of the present invention.

ALTERNATIVE COLOR WASHES.

An alternative method of rendering a color channel saturation for the above filter treated pair is the selective use of RGB levels or curves to mutually subtract the color record intended for the opposing color channels saturation. Luminosity compression is not essential for a color wash via curves or levels output. However, alternative Stereo Color Contrast filter values are required to compensate for the nature of variations in the saturation and to achieve an anaglyphically viewed contrast balance of color test charts.

Two examples of Color Wash via Curves or Levels output and ACB Stereo Color Contrast filter values follow.

Alternative example 1.

Color Wash via Curves or Levels output.

For the images to be viewed through red gel, both the green and blue output levels are set to the minimum.

Red 0-255, Green 0-0, Blue 0-0.

For the images to be viewed through green-blue gel, the red color output level is set to the minimum.

Red 0-0, Green 0-255, Blue 0-255.

This results in anaglyphic color channel saturations appearing as with the prior described color wash via color balance, one appearing red and the other green-blue.

An example of ACB Stereo Color Contrast filter values for the above alternative color wash example 1 via output levels where luminosity compression is not used is as follows:

For the image viewed through red gel.	For the image viewed through green-blue gel.
Red + cyan 55%	Red – magenta 45% – yellow 30%
Yellow + cyan 20%	Yellow + cyan 100% + magenta 3%
Green – cyan 61%	Green + magenta 28%
Cyan – cyan 68%	Cyan + magenta 70%
Blue – cyan 34%	Blue + yellow 55%
Magenta + cyan 48%	Magenta + yellow 20%
Black + or – black optional.	Black + or – black optional.

Alternative example 2.

Color Wash via curves or levels output.

For the images to be viewed through red gel, both the green and blue color output levels are set to the maximum.
Red 0-255, Green 255-255, Blue 255-255.
For theimages to be viewed through green-blue gel, the red color output level is set to the maximum.
Red 255-255, Green 0-255, Blue 0-255.
This results in saturations where the dark contrasts of the image to be viewed through red gel are saturated in graduations of green-blue in which an image can be seen through red gel, but only a void of white is seen through green-blue gel.
Correspondingly, the dark contrasts of the image to be viewed through green-blue gel are saturated in graduations of red-yellow in which an image can be seen through green-blue gel, but only a void of white is seen through red gel.
This demonstrates:

1. Near total extinction of the opposite eye's view.
2. That the image color washed predominantly red will be viewed through green-blue gel.
3. That the image color washed predominantly green-blue will be viewed through red gel.
4. That color hue and contrasts of the stereo pair are contained inside saturated and spectrally opposite channels.
5. That each eye's opposing view will be perceived invisibly as white.
6. That the anaglyphically perceived white for each view will be the saturation of the opposing color wash.

An example of ACB Stereo Color Contrast filter values for the above alternative color wash example 2 via levels output where luminosity compression is not used is as follows:

For the image viewed through red gel.	For the image viewed through green-blue gel.
Red + cyan 57% – magenta 44% – yellow 30%	Red + cyan 57% – magenta 44% – yellow 30%
Yellow + cyan 20% + magenta 3%	Yellow + cyan 20% + magenta 3%
Green – cyan 60% + magenta 28%	Green – cyan 60% + magenta 28%
Cyan – cyan 67% + magenta 69%	Cyan – cyan 67% + magenta 69%
Blue – cyan 35% + yellow 56%	Blue – cyan 35% + yellow 56%
Magenta + cyan 48% + yellow 20%	Magenta + cyan 48% + yellow 20%
Black + or – optional.	Black + or – optional.

A computer programs software values for the color wash filters described above may follow those of the preceeding filters and be pre-set to render all adjustments with a single sweep for each of the pair enabling easy and convenient anaglyph production.
Alternatively, existing analogue video color filters may supply the required saturations.

ACB BLENDING AND FUSION refer to figure 5.
The two images, left and right, now become one.
With either of the images of the stereo pair superimposed over the other they can now be blended so that they appear equally prominent. This can be achieved using a computer program to cause the opacity of the image on top to become 50% opaque so that 50% of the image bellow also shows. A blend can be achieved by using a computer program to merge such layers. Or the pixel values of the stereo pair may be averaged by computer program to result in a 50/50 blend of the two images. The separate predominantly red and predominantly green-blue images of the stereo pair are thus fused into a single composite resulting in an anaglyphic image in a contrast-compressed state.
Fig' 5 represents a histogram showing the combined RGB color records of both the left and right color washed images following their superimposition and blending into a single composite image.